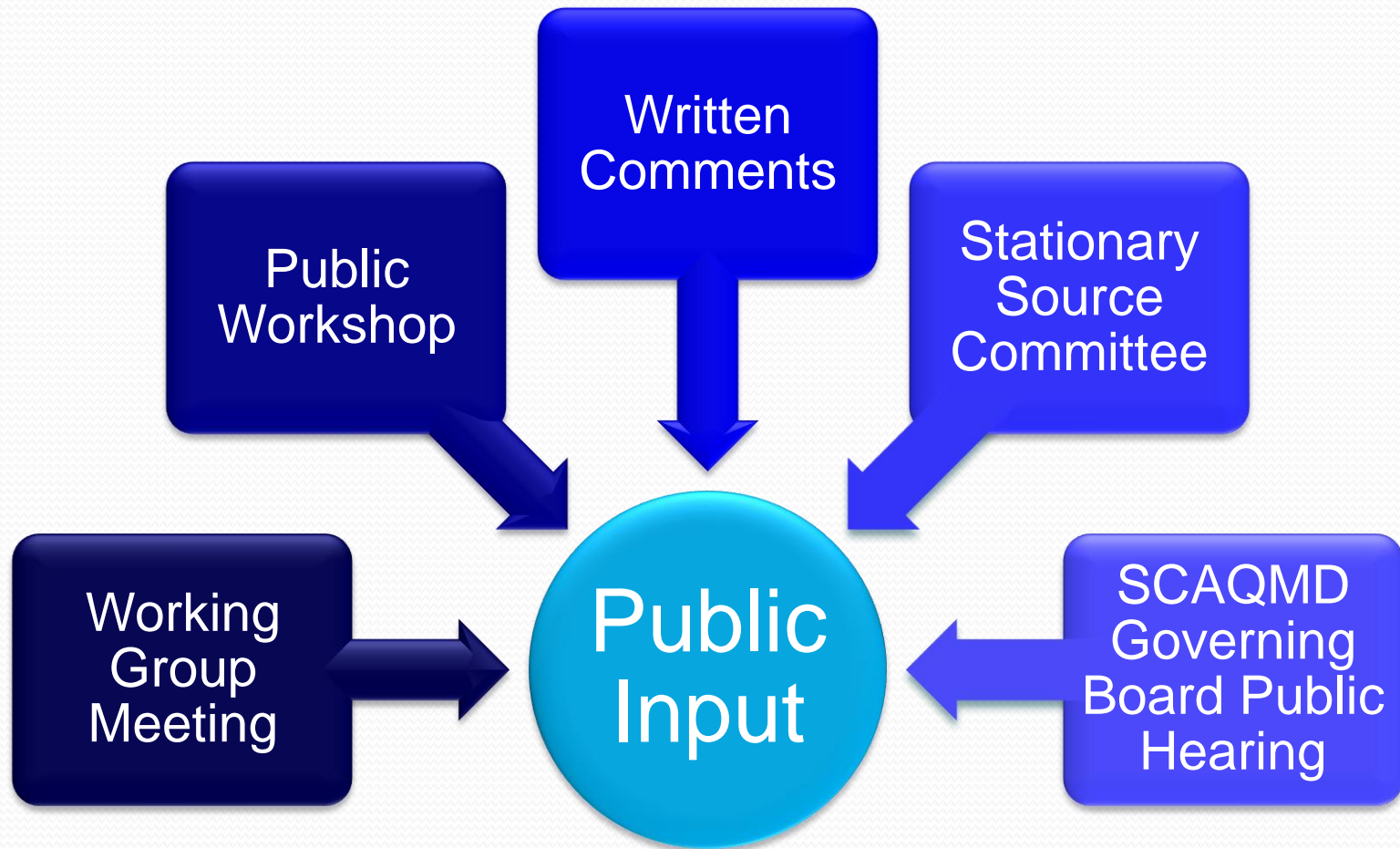


# **Proposed Rule 1420.2 Emission Standards for Lead from Lead Melting Operations**

**Working Group Meeting #1  
December 17, 2014**

# Rule Development - Public Input



# Working Group

- Comprised of stakeholders including industry, governmental agencies, environmental groups, and community members
- Provides stakeholders opportunity to discuss development of proposed rule
- Working group meetings held throughout the rule development process and open to the public

# Lead National Ambient Air Quality Standard (NAAQS)

- EPA amended lead NAAQS October 15, 2008
  - Lowered standard from  $1.5 \mu\text{g}/\text{m}^3$  to  $0.15 \mu\text{g}/\text{m}^3$
  - More stringent compliance demonstration
  - Rolling three-month average
- December of 2010 the US-EPA designated portions of LA County non-attainment for lead
  - Data showed readings above  $0.15 \mu\text{g}/\text{m}^3$  only in LA County
  - Must demonstrate attainment with the  $0.15 \mu\text{g}/\text{m}^3$  lead standard by December 31, 2015

# Health Effects of Lead

- Neurotoxin that interferes with development of brain and nervous system
- Other health effects include weakened immune system, increased blood pressure, cardiovascular disease, decreased kidney function
- New studies on lead health effects, environmental effects, and lead in the air published since 1990
  - Adverse effects at much lower levels of lead in blood
  - Children are most vulnerable – low levels of exposure linked to adverse effects to IQ, learning, and behavior

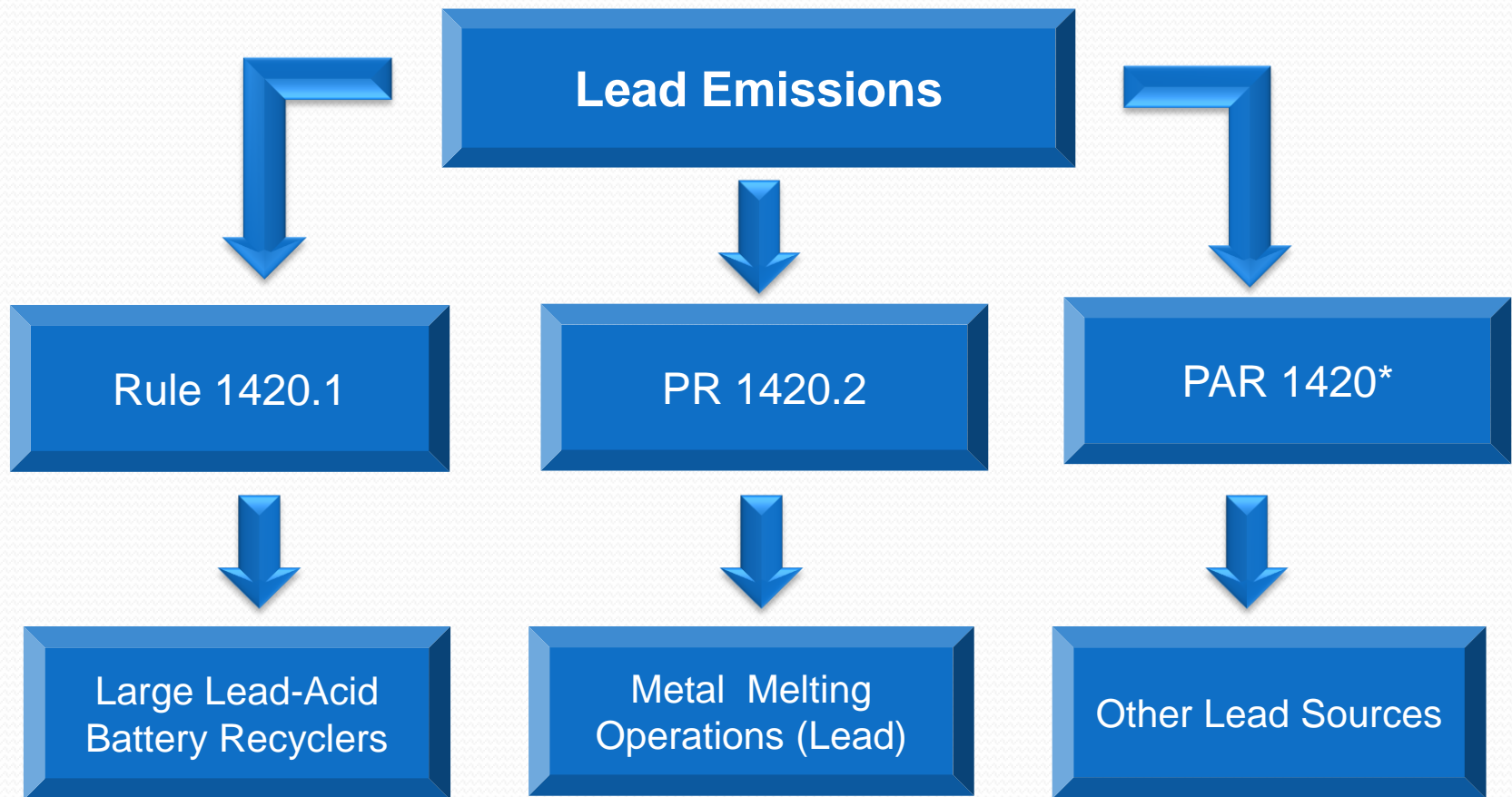
# “Rule 1420 Series” Approach

- All lead sources currently regulated under Rule 1420 and applies to all facilities spanning multiple industry categories
- With more stringent NAAQS, additional provisions necessary for specific industry categories
- Source-specific rules allow for a more prescriptive approach that is tailored to source or industry categories or facility size
- Rule 1420.1 is first in “series” and helped ensure NAAQS attainment from lead emissions from large lead-acid battery recyclers

# Initial Challenges with Rule 1420 Series Approach

- Determining what source categories can be logistically combined
- Requires extensive analysis of multiple databases for lead emissions, research on industry categories, and review of permitted equipment and source test data
- Some challenges to develop prescriptive requirements to apply within the rule

# Rule 1420 Series



\* Additional rule may be needed for other lead sources

# Rule 1420.1 Approach

- Adopted November 5, 2010 and amended twice in 2014
- Applies to large lead-acid battery recycling facilities
  - Exide Technologies (Vernon)
  - Quemetco (Industry)
- Key requirements:
  - Ambient lead and arsenic concentration limits
  - Ambient monitoring requirements
  - Point source emission limits for stacks
  - Install total enclosures and vent to air pollution controls
  - Housekeeping and maintenance provisions
  - Compliance plans, source testing, and process curtailments

# Methodology to Identify PR 1420.2 Universe

- Identified lead emitting facilities based on:
  - Permitting database – industry and/or equipment type
  - Annual Emissions Reports
    - Facilities classified as metallurgical processes that reported lead emissions (2010-2012)
    - Facilities that reported lead emissions
  - Facilities that submitted Rule 1420 compliance plans
  - Toxic Release Inventory (TRI) data for lead
- Visited variety of facilities to understand lead emission sources
- Lead melting facilities represent the majority of reported lead emissions
- Remaining facilities were smaller lead emitters and would be subject to Rule 1420

# PR1420.2 Universe of Facilities

- Identified ~30 metal melting operations that contain lead
- Potential PR1420.2 facilities:
  - Lead-acid battery manufacturers
  - Aerospace part manufacturers
  - Building material manufacturers
  - Manufacturers of other lead products (solder, x-ray shields, fishing tackles)
  - Secondary smelting\*
  - Steel pipe manufacturing
  - Alloying of aluminum and iron
  - Steel mill
  - Scrap metal recyclers (secondary lead smelters)
  - Other?

\* Excludes large lead-acid battery recyclers subject to 1420.1 (i.e., Exide and Quemetco)

# Further Characterization of PR 1420.2 Universe

- Evaluating permit files and/or compliance plans to:
  - Refine the universe
  - Identify lead processing/melting throughputs
- Challenges with existing data:
  - Current facility lead processing/melting throughputs not always available
  - Accurate lead content in process materials
  - Changes to lead production (e.g., no longer make leaded alloys)
  - Operational modifications related to lead (e.g., operate fewer furnaces)
- Staff conducting surveys to collect updated facility information
  - More accurately characterize facility activities/operations
  - Determine PR 1420.2 applicability

# Current Lead Ambient Air Monitoring Requirements

- Rule 1420
  - Requires monitoring for facilities that process > 2 tons of lead annually
  - Provides “off-ramp”
    - Facilities that process < 10 tons of lead annually can conduct dispersion modeling to demonstrate out of monitoring
  - Off-ramp provisions resulted in monitoring of only one (1) facility\*
- Rule 1420.1
  - Requires monitoring once every 3 days
  - No “off-ramp” for monitoring
  - PAR 1420.1 proposing daily monitoring

\* excludes large lead-acid battery manufacturers subject to 1420.1 (i.e., Exide and Quemetco)

# Ambient Air Monitoring Benefits

- Ambient air monitors are valuable tools capable of:
  - Measuring ambient lead concentrations from facilities
  - Monitoring both fugitive and point source emissions
  - Identifying the extent of air pollution in a given area
  - Providing data for dispersion modeling and evaluating potential health impacts
- Monitoring at lead facilities show that a significant amount of ambient lead concentrations can be attributed to fugitive emissions
- Daily monitoring can demonstrate the efficacy of housekeeping measures to reduce fugitive lead emissions and ambient air concentrations

# Metal Melting Emissions Sources

- Point source emissions generated from main process equipment:
  - Furnaces, casters, and ovens
  - Lead oxide manufacturing system and lead oxide paste blenders/mixers
  - Core and mold making equipment
- Fugitive source emissions generated from operational activity and inadequate air pollution capture and control techniques of point sources:
  - Sorting/separating of lead-containing scrap
  - Pouring and tapping of melted lead
  - Storage and transport of lead-containing materials
  - Construction and maintenance activities

# Metal Melting Emissions Controls

- Point source particulate emissions controls include:
  - Scrubbers
  - Cyclones
  - Filtration devices (e.g., bag houses, HEPA filters/cartridges)
- Fugitive source particulate emissions controls include:
  - Paving or encapsulation of facility grounds
  - Periodic washing/vacuuming of facility ground, rooftops, lead processing and storage areas
  - Total building enclosures under negative pressure
  - Storage, handling and transfer of lead containing material
  - Best management practices for maintenance and construction activities

# PR 1420.2 Regulatory Approach

- More prescriptive approach, similar to Rule 1420.1
- Initial key elements
  - Establish ambient lead concentration limit
  - Establish requirement for lead point sources
  - Total enclosures
  - Require fence line ambient air monitors – considering an off-ramp
  - Housekeeping and maintenance provisions
  - Periodic source testing of point sources
  - Compliance plan

# Schedule

- Public Workshop – January 2015
- Set Hearing – February 2015
- Board Hearing – March 7, 2015

Staff Contact:

Eugene Kang  
(909) 396-3524  
[ekang@aqmd.go](mailto:ekang@aqmd.go)

Dan Garcia  
(909) 396-3304  
[dgarcia@aqmd.gov](mailto:dgarcia@aqmd.gov)